Cleaning and considerations for dripper systems

The prevention of clogging naturally starts with the choice of a dripper that can deal easily with contamination. Thanks to their patented labyrinth with large passages, Netafim drippers are less susceptible to clogging.
That is therefore a good starting point. Despite the fact that Netafim drippers can cope with contamination, proper use can prolong their service life and maintain a high level of function.

Simple measures for maintaining drip irrigation systems

- Good maintenance of filters
- Use of irrigation set filters
- Regular flushing of pipes and dripper hoses
- A pH value of the irrigation water under 6.5
- If extreme bacteria growth is observed, aerate the water
- No addition of sticky materials such as biological preparations downline of the filter
- Always flush the system well to remove any residues

If contamination does still occur for whatever reason, various cleaning methods are possible, depending on the type of dripper, the type of contamination and the extent of the contamination. Measurement of the flow (via the computer or at the individual drippers) allows you to determine whether there is significant contamination.

What type of contamination?

In order to determine what type of contamination is present, a few drippers have to be cut open for inspection. General rules here are:

- Hard particles can indicate plastic chips, sand, rust and/or precipitated fertiliser.
- Contamination due to algae is recognisable from green/brown accumulations that is wet form are soft and easy to smear into very fine particles. When dry, algae contamination is hard and brittle and can be easily ground into fine particles.
- Bacteria are frequently recognisable from the fact that they form a glossy, transparent and slimy layers. When dry, bacteria contamination is frequently similar to contamination due to fertilisers.
- Contamination due to bacteria occurs more frequently if osmosis water or spring water is used, or if there is a great deal of organic material in the water.

Cleaning of drippers (at crop changes)

- Acid against precipitated fertiliser. A concentration of 2 to 3 litres of hydrochloric acid (38% solution) per 100 litres of water for a maximum of 12 hours is possible (pH to be reached depends on the mixing water, but must not be less than pH 2).
- Peroxide agents against organic contamination both during and after the crop. Ask the supplier of the peroxide used for information on the required concentrations, as peroxide agents can have a number of different ingredients.
- Chlorine bleach lye against organic contamination. Drippers with a silicone diaphragm, or without diaphragm, are resistant to chlorine bleach lye (3 litres of 15% solution per 100 litres of water) for a maximum of 12 hours.
- Ensure that acid and chlorine do not come into contact with one another.
- Suction is only effective for the cleaning of drippers without a shut-off function.
- Pressure increases are only effective for the cleaning of drippers without diaphragm.

Overview of cleaning agents for Netafim drippers

Dripper	Acid	Peroxide	Chlorine	Pressure increase	Suction
Kameleon(-High)	+	+	+/-*	-	-
CNL	+	+	+/-*	-	-
Multi-outlet	+	+	+	-	-
Woodpecker	+	+	+	x	+
Cobra	+	+	+	x	+
Capinet	+	+	+	x	+
Capillary	+	+	+	x	+
	+: Suitable	-: Not possible	+/-: Possible, depending on type	x: Limited risk	

** Kameleon(-High), CNL with silicone diaphragm can be cleaned with chlorine. The silicone diaphragm is transparent (Kameleon, Kameleon-High) or pigmented (CNL). All Kameleon drippers with a pigmented underside have silicone diaphragms. Black diaphragms are made from EPDM material (before 2002) and cannot be cleaned with chlorine-based agents.*

Important points for cleaning

- Flush the system thoroughly with clean water before, between and after the treatments. Start with the main pipe, then the distribution pipe and finally the dripper hoses.
- Ensure that the fixed pH and EC meters do not come into contact with the cleaning agents.
- Ensure that the (concentrated) cleaning agents do not come into contact with the crop.
- Ensure that the cleaning agents are removed from the drippers again after a few hours by flushing with fresh water in short irrigation cycles.
- Check during filling that the acid or chlorine bleach lye has reached the last dripper.
- Contamination with sand, rust and/or (PVC) chips cannot be removed from the drippers. Replacement of the clogged drippers is the only option.
- If in doubt, contact Revaho for the right advice.

Pay attention to the prescribed concentrations and safety measures! **Ensure that chlorine bleach lye and acid never come into contact with one another!** The combination of chlorine with a low pH (under 5) can result in chlorine gas forming that can damage the silicone diaphragm. This applies to both continuous metering and to occasional cleaning.